

CLAIMS

1. A network analyzer comprising:
 - an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors;
 - a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal;
 - a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; and
 - a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element.
2. The network analyzer according to claim 1, wherein said reflected signal measuring element measures the predetermined parameter concerning said reflected signal for said input signal reflected from a correction tool connected to said network analyzer, said correction tool achieving three kinds of conditions of opening, shorting and standard loading.
3. The network analyzer according to claim 1 or 2, further comprising a receiving element for receiving said input signal, after being output, as a received signal, said receiving element having a received signal measuring element for measuring a predetermined parameter concerning said received

signal,

wherein said measurement system error factor acquiring element acquires measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element, said signal output acquiring element and said received signal measuring element.

4. The network analyzer according to claim 3, wherein said reflected signal measuring element measures a predetermined parameter concerning a reflected signal for said input signal reflected from a device under test, and wherein said receiving element receives said input signal, after being output, through said device under test as said received signal, further comprising a parameter measuring element for measuring predetermined parameters concerning said device under test based on the measurement results, concerning said device under test, of said input signal measuring element, said reflected signal measuring element and said received signal measuring element, and said measurement system error factors.

5. The network analyzer according to claim 3, wherein said receiving element comprises:

a receiving side input signal measuring element for measuring a predetermined parameter concerning said input signal before the occurrence of measurement system error factors;

a receiving side reflected signal measuring element for measuring a predetermined parameter concerning a receiving side reflected signal for said input signal after being output from said receiving element and being reflected;

a receiving side signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; and

a receiving side measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said receiving side signal output acquiring element.

6. The network analyzer according to claim 5, wherein said receiving side reflected signal measuring element is said received signal measuring element.

7. The network analyzer according to claim 5 or 6, wherein said receiving side reflected signal measuring element measures the predetermined parameter concerning said reflected signal for said input signal reflected from a correction tool connected to said network analyzer, said correction tool achieving three kinds of conditions of opening, shorting and standard loading.

8. The network analyzer according to any of claims 5 to 7,
wherein said reflected signal measuring element measures a predetermined parameter by receiving said input signal after being output from said receiving element, and

wherein said receiving side measurement system error factor acquiring element acquires measurement system error factors based on the measurement results of said receiving side input signal measuring element,

said receiving side reflected signal measuring element, said receiving side signal output acquiring element and said reflected signal measuring element.

9. The network analyzer according to claim 8,

wherein in the case said input signal is given to a device under test directly, said reflected signal measuring element measures a predetermined parameter concerning a reflected signal for said input signal reflected from said device under test and said receiving element receives said input signal, after being output, through said device under test as said received signal, and

wherein in the case said input signal is given to said device under test through said receiving element, said receiving side reflected signal measuring element measures a predetermined parameter concerning a receiving side reflected signal for said input signal reflected from said device under test and said reflected signal measuring element measures a predetermined parameter by receiving said input signal, after being output from said receiving element, through said device under test, further comprising

a parameter measuring element for measuring predetermined parameters concerning said device under test based on:

the measurement results, concerning said device under test, of said input signal measuring element, said reflected signal measuring element and said received signal measuring element in the case said input signal is given to said device under test directly;

the measurement results, concerning said device under test, of said receiving side input signal measuring element, said receiving side reflected

signal measuring element and said reflected signal measuring element in the case said input signal is given to said device under test through said receiving element; and

said measurement system error factors.

10. The network analyzer according to claim 9, further comprising a selecting element for selecting whether said input signal is given to said device under test directly or through said receiving element.

11. The network analyzer according to any of claims 4, 9 and 10, wherein the frequency of an input signal of said device under test is different from that of the output signal thereof.

12. The network analyzer according to claim 11, wherein said device under test is a mixer.

13. The network analyzer according to any of claims 1 to 12, wherein said predetermined parameters are S parameters or powers.

14. A network analyzing method comprising:

an input signal measuring step for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors;

a reflected signal measuring step for measuring a predetermined parameter concerning a reflected signal for said input signal;

a signal output acquiring step for acquiring the predetermined parameter concerning said input signal after the occurrence of the

measurement system error factors; and

a measurement system error factor acquiring step for acquiring the measurement system error factors based on the measurement results of said input signal measuring step, said reflected signal measuring step and said signal output acquiring step.

15. The network analyzing method according to claim 14, wherein a network analyzing is performed by a network analyzer having a receiving element for receiving said input signal, after being output, as a received signal, said method further comprising

a received signal measuring step for measuring a predetermined parameter concerning said received signal,

wherein said measurement system error factor acquiring step acquires measurement system error factors based on the measurement results of said input signal measuring step, said reflected signal measuring step, said signal output acquiring step and said received signal measuring step.

16. The network analyzing method according to claim 15,

wherein said reflected signal measuring step measures a predetermined parameter concerning a reflected signal for said input signal reflected from a device under test, and wherein said receiving element receives said input signal, after being output, through said device under test as said received signal, said method further comprising

a parameter measuring element for measuring predetermined parameters concerning said device under test based on the measurement results, concerning said device under test, of said input signal measuring

element, said reflected signal measuring step and said received signal measuring step, and said measurement system error factors.

17. The network analyzing method according to claim 15, further comprising:

a receiving side input signal measuring step for measuring a predetermined parameter concerning said input signal before the occurrence of measurement system error factors;

a receiving side reflected signal measuring step for measuring a predetermined parameter concerning a receiving side reflected signal for said input signal after being output from said receiving element and being reflected;

a receiving side signal output acquiring step for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; and

a receiving side measurement system error factor acquiring step for acquiring the measurement system error factors based on the measurement results of said receiving side input signal measuring step, said receiving side reflected signal measuring step and said receiving side signal output acquiring step.

18. The network analyzing method according to claim 17,

wherein said reflected signal measuring step measures a predetermined parameter by receiving said input signal after being output from said receiving element, and

wherein said receiving side measurement system error factor acquiring step acquires measurement system error factors based on the

measurement results of said receiving side input signal measuring step, said receiving side reflected signal measuring step, said receiving side signal output acquiring step and said reflected signal measuring step.

19. The network analyzing method according to claim 18,

wherein in the case said input signal is given to a device under test directly, said reflected signal measuring step measures a predetermined parameter concerning a reflected signal for said input signal reflected from said device under test and said receiving element receives said input signal, after being output, through said device under test as said received signal, and

wherein in the case said input signal is given to said device under test through said receiving element, said receiving side reflected signal measuring step measures a predetermined parameter concerning a receiving side reflected signal for said input signal reflected from said device under test and said reflected signal measuring step measures a predetermined parameter by receiving said input signal, after being output from said receiving element, through said device under test,

said method further comprising:

a parameter measuring step for measuring predetermined parameters concerning said device under test based on:

the measurement results, concerning said device under test, of said input signal measuring step, said reflected signal measuring step and said received signal measuring step in the case said input signal is given to said device under test directly;

the measurement results, concerning said device under test, of said receiving side input signal measuring step, said receiving side reflected

signal measuring step and said reflected signal measuring step in the case said input signal is given to said device under test through said receiving element; and

said measurement system error factors.

20. A program of instructions for execution by the computer to perform a network analyzing process of a network analyzer having: an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; and a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors, said network analyzing process comprising:

a measurement system error factor acquiring step for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element.

21. The program according to claim 20,

wherein said network analyzer further comprising a receiving element for receiving said input signal, after being output, as a received signal, said receiving element having a received signal measuring element for measuring a predetermined parameter concerning said received signal, and

wherein said measurement system error factor acquiring step acquires measurement system error factors based on the measurement

results of said input signal measuring element, said reflected signal measuring element, said signal output acquiring element and said received signal measuring element.

22. The program according to claim 21,

wherein said reflected signal measuring element measures a predetermined parameter concerning a reflected signal for said input signal reflected from a device under test, and

wherein said receiving element receives said input signal, after being output, through said device under test as said received signal,

said network analyzing process further comprising a parameter measuring step for measuring predetermined parameters concerning said device under test based on the measurement results, concerning said device under test, of said input signal measuring element, said reflected signal measuring element and said received signal measuring element, and said measurement system error factors.

23. The program according to claim 21,

wherein said receiving element comprises:

a receiving side input signal measuring element for measuring a predetermined parameter concerning said input signal before the occurrence of measurement system error factors;

a receiving side reflected signal measuring element for measuring a predetermined parameter concerning a receiving side reflected signal for said input signal after being output from said receiving element and being reflected; and

a receiving side signal output acquiring element for acquiring the

predetermined parameter concerning said input signal after the occurrence of the measurement system error factors,

said network analyzing process further comprising a receiving side measurement system error factor acquiring step for acquiring the measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said receiving side signal output acquiring element.

24. The program according to claim 23,

wherein said reflected signal measuring element measures a predetermined parameter by receiving said input signal after being output from said receiving element, and

wherein said receiving side measurement system error factor acquiring step acquires measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element, said receiving side signal output acquiring element and said reflected signal measuring element.

25. The program according to claim 24,

wherein in the case said input signal is given to a device under test directly, said reflected signal measuring element measures a predetermined parameter concerning a reflected signal for said input signal reflected from said device under test and said receiving element receives said input signal, after being output, through said device under test as said received signal, and

wherein in the case said input signal is given to said device under test through said receiving element, said receiving side reflected signal measuring element measures a predetermined parameter concerning a receiving side reflected signal for said input signal reflected from said device under test and said reflected signal measuring element measures a predetermined parameter by receiving said input signal, after being output from said receiving element, through said device under test,

said network analyzing process further comprising a parameter measuring step for measuring predetermined parameters concerning said device under test based on:

the measurement results, concerning said device under test, of said input signal measuring element, said reflected signal measuring element and said received signal measuring element in the case said input signal is given to said device under test directly;

the measurement results, concerning said device under test, of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said reflected signal measuring element in the case said input signal is given to said device under test through said receiving element; and

said measurement system error factors.

26. A computer-readable medium having a program of instructions for execution by the computer to perform a network analyzing process of a network analyzer having: an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for

said input signal; and a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors, said network analyzing process comprising:

a measurement system error factor acquiring step for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element.

27. The computer-readable medium having the program according to claim 26,

wherein said network analyzer further comprising a receiving element for receiving said input signal, after being output, as a received signal, said receiving element having a received signal measuring element for measuring a predetermined parameter concerning said received signal, and

wherein said measurement system error factor acquiring step acquires measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element, said signal output acquiring element and said received signal measuring element.

28. The computer-readable medium having the program according to claim 27,

wherein said reflected signal measuring element measures a predetermined parameter concerning a reflected signal for said input signal reflected from a device under test, and

wherein said receiving element receives said input signal, after being output, through said device under test as said received signal,

said network analyzing process further comprising a parameter measuring step for measuring predetermined parameters concerning said device under test based on the measurement results, concerning said device under test, of said input signal measuring element, said reflected signal measuring element and said received signal measuring element, and said measurement system error factors.

29. The computer-readable medium having the program according to claim 27,

wherein said receiving element comprises:

a receiving side input signal measuring element for measuring a predetermined parameter concerning said input signal before the occurrence of measurement system error factors;

a receiving side reflected signal measuring element for measuring a predetermined parameter concerning a receiving side reflected signal for said input signal after being output from said receiving element and being reflected; and

a receiving side signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors,

said network analyzing process further comprising a receiving side measurement system error factor acquiring step for acquiring the measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said receiving side signal output acquiring

element.

30. The computer-readable medium having the program according to claim 29,

wherein said reflected signal measuring element measures a predetermined parameter by receiving said input signal after being output from said receiving element, and

wherein said receiving side measurement system error factor acquiring step acquires measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element, said receiving side signal output acquiring element and said reflected signal measuring element.

31. The computer-readable medium having the program according to claim 30,

wherein in the case said input signal is given to a device under test directly, said reflected signal measuring element measures a predetermined parameter concerning a reflected signal for said input signal reflected from said device under test and said receiving element receives said input signal, after being output, through said device under test as said received signal, and

wherein in the case said input signal is given to said device under test through said receiving element, said receiving side reflected signal measuring element measures a predetermined parameter concerning a receiving side reflected signal for said input signal reflected from said device under test and said reflected signal measuring element measures a

predetermined parameter by receiving said input signal, after being output from said receiving element, through said device under test,

said network analyzing process further comprising a parameter measuring step for measuring predetermined parameters concerning said device under test based on:

the measurement results, concerning said device under test, of said input signal measuring element, said reflected signal measuring element and said received signal measuring element in the case said input signal is given to said device under test directly;

the measurement results, concerning said device under test, of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said reflected signal measuring element in the case said input signal is given to said device under test through said receiving element; and

said measurement system error factors.

32. An automatic corrector being connected to a network analyzer having: (a) an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; (b) a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; (c) a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; (d) a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal

output acquiring element, and (e) a receiving element for receiving said input signal, after being output, as a received signal, said automatic corrector comprising:

a plurality of correction tools for achieving different conditions respectively and

an input signal providing element for providing said input signal by selecting any one of said correction tools or said receiving element automatically.

33. The automatic corrector according to claim 32, wherein said input signal providing element provides said input signal by selecting any one of said correction tools, said receiving element, or said signal output acquiring element automatically.

34. The automatic corrector according to claim 33, wherein said input signal providing element provides said input signal to said signal output acquiring element through a power meter.

35. The automatic corrector according to claim 33, wherein said input signal providing element provides said input signal to said signal output acquiring element through a power sensor and a power meter body, said power sensor being built in said automatic corrector and said power meter body being built in said network analyzer.

36. An automatic corrector being connected to a network analyzer having: (a) an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence

of measurement system error factors; (b) a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; (c) a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; (d) a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element, and (e) a receiving element for receiving said input signal, after being output, as a received signal,

wherein said receiving element comprises: (e-1) a receiving side input signal measuring element for measuring a predetermined parameter concerning said input signal before the occurrence of measurement system error factors; (e-2) a receiving side reflected signal measuring element for measuring a predetermined parameter concerning a receiving side reflected signal for said input signal after being output from said receiving element and being reflected; (e-3) a receiving side signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; and (e-4) a receiving side measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said receiving side signal output acquiring element,

said automatic corrector comprising:

a plurality of first correction tools for achieving different conditions respectively in regard to the signal source of said input signal;

a plurality of second correction tools for achieving different conditions respectively in regard to said receiving element;

a first input signal providing element for providing said input signal from said signal source by selecting any one of said first correction tools or said receiving element automatically; and

a second input signal providing element for providing said input signal routed through said receiving element by selecting any one of said second correction tools or said signal source automatically.

37. The automatic corrector according to claim 36,

wherein said first input signal providing element provides said input signal by selecting any one of said first correction tools, said receiving element, or said signal output acquiring element automatically, and

wherein said second input signal providing element provides said input signal routed through said receiving element by selecting any one of said second correction tools, said signal source, or said receiving side signal output acquiring element automatically.

38. The automatic corrector according to claim 37,

wherein said first input signal providing element provides said input signal to said signal output acquiring element through a first power meter, while said second input signal providing element provides said input signal to said receiving side signal output acquiring element through a second power meter.

39. The automatic corrector according to claim 37,

wherein said first input signal providing element provides said input

signal to said signal output acquiring element through a first power sensor and a first power meter body, while said second input signal providing element provides said input signal to said receiving side signal output acquiring element through a second power sensor and a second power meter body,

said first and second power sensors being built in said automatic corrector and said first and second power meter bodies being built in said network analyzer.

40. A correction method of an automatic corrector having a plurality of correction tools for achieving different conditions respectively and being connected to a network analyzer having: (a) an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; (b) a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; (c) a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; (d) a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element, and (e) a receiving element for receiving said input signal, after being output, as a received signal,

said correction method comprising an input signal providing step for providing said input signal by selecting any one of said correction tools or said receiving element automatically.

41. A correction method of an automatic corrector having a plurality of first correction tools for achieving different conditions respectively in regard to the signal source of said input signal, and a plurality of second correction tools for achieving different conditions respectively in regard to said receiving element; and being connected to a network analyzer having: (a) an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; (b) a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; (c) a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; (d) a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element, and (e) a receiving element for receiving said input signal, after being output, as a received signal,

wherein said receiving element comprises: (e-1) a receiving side input signal measuring element for measuring a predetermined parameter concerning said input signal before the occurrence of measurement system error factors; (e-2) a receiving side reflected signal measuring element for measuring a predetermined parameter concerning a receiving side reflected signal for said input signal after being output from said receiving element and being reflected; (e-3) a receiving side signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; and (e-4) a receiving

side measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said receiving side signal output acquiring element,

said correction method comprising:

a first input signal providing step for providing said input signal from said signal source by selecting any one of said first correction tools or said receiving element automatically; and

a second input signal providing step for providing said input signal routed through said receiving element by selecting any one of said second correction tools or said signal source automatically.

42. A program of instructions for execution by the computer to perform a correction process of an automatic corrector having a plurality of correction tools for achieving different conditions respectively and being connected to a network analyzer having: (a) an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; (b) a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; (c) a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; (d) a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element, and (e) a receiving element for

receiving said input signal, after being output, as a received signal,

said correction process comprising an input signal providing step for providing said input signal by selecting any one of said correction tools or said receiving element automatically.

43. A program of instructions for execution by the computer to perform a correction process of an automatic corrector having a plurality of first correction tools for achieving different conditions respectively in regard to the signal source of said input signal, and a plurality of second correction tools for achieving different conditions respectively in regard to said receiving element; and being connected to a network analyzer having: (a) an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; (b) a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; (c) a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; (d) a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element, and (e) a receiving element for receiving said input signal, after being output, as a received signal,

wherein said receiving element comprises: (e-1) a receiving side input signal measuring element for measuring a predetermined parameter concerning said input signal before the occurrence of measurement system error factors; (e-2) a receiving side reflected signal measuring element for

measuring a predetermined parameter concerning a receiving side reflected signal for said input signal after being output from said receiving element and being reflected; (e-3) a receiving side signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; and (e-4) a receiving side measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said receiving side signal output acquiring element,

said correction process comprising:

a first input signal providing step for providing said input signal from said signal source by selecting any one of said first correction tools or said receiving element automatically; and

a second input signal providing step for providing said input signal routed through said receiving element by selecting any one of said second correction tools or said signal source automatically.

44. A computer-readable medium having a program of instructions for execution by the computer to perform a correction process of an automatic corrector having a plurality of correction tools for achieving different conditions respectively and being connected to a network analyzer having: (a) an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; (b) a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; (c) a signal output acquiring element for acquiring the predetermined

parameter concerning said input signal after the occurrence of the measurement system error factors; (d) a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element and said signal output acquiring element, and (e) a receiving element for receiving said input signal, after being output, as a received signal,

said correction process comprising an input signal providing step for providing said input signal by selecting any one of said correction tools or said receiving element automatically.

45. A computer-readable medium having a program of instructions for execution by the computer to perform a correction process of an automatic corrector having a plurality of first correction tools for achieving different conditions respectively in regard to the signal source of said input signal, and a plurality of second correction tools for achieving different conditions respectively in regard to said receiving element; and being connected to a network analyzer having: (a) an input signal measuring element for measuring a predetermined parameter concerning an input signal before the occurrence of measurement system error factors; (b) a reflected signal measuring element for measuring a predetermined parameter concerning a reflected signal for said input signal; (c) a signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; (d) a measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said input signal measuring element, said reflected signal measuring element

and said signal output acquiring element, and (e) a receiving element for receiving said input signal, after being output, as a received signal,

wherein said receiving element comprises: (e-1) a receiving side input signal measuring element for measuring a predetermined parameter concerning said input signal before the occurrence of measurement system error factors; (e-2) a receiving side reflected signal measuring element for measuring a predetermined parameter concerning a receiving side reflected signal for said input signal after being output from said receiving element and being reflected; (e-3) a receiving side signal output acquiring element for acquiring the predetermined parameter concerning said input signal after the occurrence of the measurement system error factors; and (e-4) a receiving side measurement system error factor acquiring element for acquiring the measurement system error factors based on the measurement results of said receiving side input signal measuring element, said receiving side reflected signal measuring element and said receiving side signal output acquiring element,

said correction process comprising:

a first input signal providing step for providing said input signal from said signal source by selecting any one of said first correction tools or said receiving element automatically; and

a second input signal providing step for providing said input signal routed through said receiving element by selecting any one of said second correction tools or said signal source automatically.